

DOCUMENT RESUME

ED 461 762

CE 082 910

AUTHOR Kirk, James J.
TITLE E-Learning: An Executive Summary.
PUB DATE 2002-02-10
NOTE 14p.
PUB TYPE Information Analyses (070)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Comparative Analysis; Computer Uses in Education; Conventional Instruction; Corporate Education; Definitions; *Delivery Systems; *Distance Education; *Educational Benefits; Educational Media; Educational Technology; Educational Trends; Futures (of Society); Guidelines; Industrial Training; Instructional Development; *Job Training; *Online Courses; Organizational Development; Postsecondary Education; *Program Development; Secondary Education; Trend Analysis; Web Based Instruction; World Wide Web
IDENTIFIERS Just in Time Systems; Synchronous Learning

ABSTRACT

Electronic learning (or "e-learning") has become an integral part of organizational training. E-learning may be delivered via numerous electronic media, including the Internet, intranets, extranets, satellite broadcast, audio/videotape, interactive television, and CD-ROM. At its best, e-learning is individual, customized learning that allows learners to choose and review material at their own pace. E-learning is efficient because it shortens the time required to update workers on new products, methods, and processes. Proponents of e-learning suggest that it provides real-time learning of critical or just-in-time knowledge. With state-of-the-art e-learning management systems, training costs can be traced to individual learners and costs can then be measured against results. Advocates believe that online training is better, faster, and cheaper than conventional training. Trainers planning to launch an e-learning program for their organization's employees should heed the following guidelines: (1) make sure that top management supports the initiative; (2) determine the program's target audience and identify audience members' learning styles; (3) examine the training program's content and ascertain whether the program must be built from scratch; (4) determine which instructional methodologies will be used; and (5) establish a proposed time frame for development, allowing adequate time to for approval of instructional methods and for evaluation periods. (Contains 14 references.) (MN)

Authors Dr. James J. Kirk Ed. D.
Professor Human Resource Development
210 Killian
Western Carolina University
Cullowhee, NC 28723
(828) 645-2420
kirk@wcu.edu

Title E-Learning: An Executive Summary

Publishing Date February 10, 2002

Note Document contains a bibliography.

Pub. Type Document

EDRS Price

Descriptors e-learning, e-training, web-based instruction, distance learning

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Abstract

Recent technological growth has revolutionized traditional classroom instruction. Today, "e-learning," or electronic learning, has become an integral part of organizational training. Trainers and educators alike need to understand what e-learning is, who delivers e-learning, and why it is being embraced by so many companies and universities. Furthermore, educators need to become acquainted with the major strength and limitations of e-learning, some common outcomes of e-learning programs, and the dos and don'ts to launching a successful e-learning initiative. To this end, the author provides readers a brief summary on the state of e-learning.

E-learning: An Executive Summary

By Dr. James Kirk
Professor of Human Resources
Western Carolina University

Recent technological growth has revolutionized traditional classroom instruction. Today, "e-learning," or electronic learning, has become an integral part of organizational training. E-learning is also known as on-line learning, web-based training, computer-based training, and distance learning (Pantazis, 2001). The American Society for Training and Development defines e-learning as, "anything delivered, enabled, or mediated by electronic technology for the explicit purpose of learning" (Hicks, 2000).

E-learning is delivered via a variety of electronic media including the Internet, intranets, extranets, satellite broadcast, audio/video tape, interactive TV, and CD-ROM (Cross, 2001). It often incorporates multimedia, instructor-led, and real-time training, all in a collaborative learning environment (Brockbank, 2001). E-learning strives to utilize information and communications technology (ICT) to develop, enhance, and broaden learning experiences of all kinds (*E-learning in the Internet Age*).

At its best, e-learning is individual, customized learning, rather than organizational-based. It enables training professionals to present an abundance of courses and material right at the employee's desktop. The learner can choose courses and review material at her/his own pace. When the course or instruction is completed, the program frequently presents an assessment tool (Grensing-Pophal, 2001).

Why E-Learning?

E-learning is revolutionizing education. One of the driving forces for this revolution is the fact that human capital has become the principal source of economic value in organizations. Thus employee development and training have become crucial objectives for a majority of the workforce. In the information age, the age of the educated worker, nothing matters so much as the worker's understanding and knowledge. Technological changes have increased the workplace in intensity and pace. Today's workforce must process more information in a much shorter amount of time (Cross, 2001).

A large percentage of companies are investing in numerous electronic learning options. They are electing to develop the training content themselves or participate in a range of learning portals available either on the World-Wide-Web or hosted within the organization. If web-based training does not meet training needs, organizations typically switch to computer-based training methods. Furthermore, organizations with a high volume of training frequently elect to implement e-training internally. In-house systems provide a means for tracking whether employees meet, or don't meet, the training requirements. If organizations strive for ease and cost-effective goals, employees are usually enrolled in distance learning or self-paced courses over the Web (Mitchell, 2000).

Ideally, e-learning is efficient learning. It shortens the amount of time it takes to get workers updated on new products, methods, and processes. Kevin Okaes, president and CEO of Click2Learn asserts, "Because product cycles, competitive intelligence, industry information, and corporate strategies are moving and changing so much faster than they used to, companies

understand that the only way to get knowledge to their employees is through an e-learning initiative that relies on the Internet.” With the American workforce aging (median age of US worker is expected to rise from 35.3 to 40.6 in 2006) and with the automation of a large percentage of unskilled jobs, training is essential for employees to remain vital in today’s knowledge based economy (Cross, 2001).

Cisco Systems has identified key drivers for its e-learning needs. They have categorized them into e-learning objectives, challenges, and pressures (Cross, 2001). The objectives are; (1)The implementation of fast and effective deployment of critical knowledge, (2)Maintenance of a well-trained and up-to-date workforce, and (3)Cost-effective learning. The challenges are; (1)Geographically dispersed learners, especially in global markets, (2)Handling phenomenal technological growth, (3)The difficulty and added expensive of training logistics, and (4)The ever-evolving need for knowledge on demand. Pressures include: (1)Relentless competition, (2)Ongoing changes, shifts, and trends in technology, (3)Shorten product cycles, and (4)Shorter length of time to the market (Cross, 2001).

Providers of E-Learning

From portals to startups to one-stops, to application service providers (ASPs) and education service providers (ESPs), the e-learning industry comprises many players. WR Hambrecht & Company has broken down the e-learning market into three segments: content, technology, and services. Currently, content holds the largest segment of the market at 66 percent, with an annual growth rate of 74 percent. Technology is expected to have an annual growth rate of 80 percent by 2003. Services, however, is growing rapidly at 111 percent estimated growth. The content segment consists of publishers, licensors, and traditional instruction companies. Element

K, Learn2.com, SkillSoft, Execu-Train, and Learning Tree International are examples. The technology segment is made up of software and hardware suppliers that develop, deliver, and administer authoring and publishing tools, collaboration tools, learning management systems, and custom e-learning software (Abernathy, 2000).

The corporate sector including companies such as Lucent Technologies and AT&T have created on-line universities for employee programs within their companies. These e-learning groups cater to internal needs. Often, they offer their training materials for sale among their vertical industries and markets. Higher education is also stepping into the e-learning market. With hundreds of on-line course offerings, the University of Phoenix has become one of the major e-learning vendors in the country. Furthermore, technical institutes, such as DeVry and Aptech, as well as M.I.T., Harvard, and the University of Pennsylvania are developing specialized e-learning technologies (Bowen, 2001).

Due to the plethora of e-learning providers available, organizations must assess learning needs, define learning requirements, and examine the quality of the courseware. Most providers will allow you to analyze the quality of the courseware before purchasing. During vendor assessment it is important to investigate if the provider offers a simple framework, the courseware, or a bit of both (Wonnacott, 2000).

Strengths and Limitations of E-Learning

Proponents of e-learning suggest that it provides real-time learning of critical or just-in-time knowledge (i.e., immediate and current information). E-learning is available anytime, anywhere (Brockbank, 2001). Virtual classrooms are now possible twenty-four hours a day, seven days a week. In an age of increasing workplace flexibility, e-learning offers the

opportunity to access knowledge at individual and convenient times. This around-the-clock access is especially attractive to multi-national, global organizations. With employees spread across varying time zones, they have access to learning at various times. Also, learners have access to others around the world taking the same course (Mitchell, 2000).

E-learning can be self-paced, with a focus on the learner. Thus, with e-learning, the spotlight switches from the trainer to the learner. Training is tailored to an individual's job duties and responsibilities. Furthermore, e-learning is capable of empowering individuals to direct their own training and development. This empowerment can help attract, train, and retain employees. According to Brockbank (Brockbank, 2001) employers often lose employees because they do not invest enough time in their professional development and growth opportunities.

E-learning is cost effective. It can save time because it is not as intrusive in daily work tasks. Learners access information on their own time; when it is convenient to their individual schedules. E-learning also reduces the traditional monetary cost of training. (i.e. travel, equipment, printing, and location expenses) (Brockbank, 2001). According to WR Hambrecht & Co. and International Data Corp, in 1999, companies spent approximately \$62.5 billion in training costs, of which \$3 billion was spent on technology-based instruction. They estimate that by 2003, companies are expected to spend only \$11.5 billion annually on technology-based education (Koprowski, 2000).

With state-of-the-art e-learning management systems, training costs can also be tracked to each individual learner. The cost can then be measured against the results. It can be measured in terms of knowledge gain and retention. Corporations can then record progress, evaluate results, and assess additional training needs. Thus, the return on investment can be seen not only by the employer, but also the employee (Koprowski, 2000).

On-line learning is an alternative form of educating employees that delivers knowledge to every desktop, while reducing traditional training costs. However, there are some limitations. Start-up costs associated with implementing an online learning program can be considerable. Expenses may involve technological infrastructure upgrades throughout the entire organization. Employees may then have to develop new knowledge, skills, and abilities associated to e-learning systems and procedures (Hicks, 2000).

Some courses, because of their nature, may not be suitable for online training. Team-building, hands-on work, and instruction with an emphasis on peer feedback along with collaboration, may be less suitable for technology-based delivery (Mitchell, 2000). A course on customer service, for example, may necessitate live contact for effective learning (*Benefits and Pitfalls of e-learning*).

Motivating employees to attend online courses presents a challenge. This introduces a bottleneck for organizations. Motivation is needed to link the computer monitor to the learner's mind. This is reflected in the failure of CD-ROM based-training. Instructors, coaches, and facilitators, were taken out of the learning process. (Cross, 2001). Global corporations may face this challenge. In some cultures, learning is based on expert opinion. If they do not personally converse with the expert, some people feel that they have not learned (Koprowski, 2000).

How a person learns may also influence the effectiveness of e-learning. On-line learning may not be for everyone. Learners, especially adult learners, differ in their tendencies and preferences in training. Training professionals need to be aware of these needs, and be flexible and willing to incorporate various learning styles and methods (*Benefits and Pitfalls of e-learning*).

E-Learning Results

Advocates believe that online training is better, faster and cheaper. According to Kenneth T. Derr of Chevron Corporation, "Sharing and managing knowledge throughout our company was one of the keys to reducing our operating costs by more than \$2 billion per year." WR Hambrecht & Company, an on-line investment bank, declares, "Learners can better understand the material, leading to a 60% faster learning curve compared to instructor-led training. Furthermore, the average content retention rate for an instructor-led class is only 58%, the more intensive e-learning experience enhances the retention rate for an instructor-led by 25-60%. Higher retention of the material puts a higher value on every dollar spent on training." The Merrill Lynch Book of Knowledge states that Motorola calculates that every \$1 it spends on training translates to \$30 in productivity gains within three years (Cross, 2001). Computer-based training and on-line training can reduce training costs over instructor-led training: A congressionally mandated review of 47 comparisons of multimedia instruction with more conventional approaches to instruction found time savings of 30% improved achievement and cost savings of 30-40% (Cross, 2001).

Click2Learn, a learning portal of Asymetrix Learning systems, compared the benefits of on-line learning versus classroom training in terms of access, quality, results measurement, retention of information, and relative cost. For classroom training, access was limited, quality varied, results were difficult to measure, retention was varied, and the relative cost was high. On-line learning, on the contrary, offered anytime access, consistent quality, automatic results measurement, high retention, and a low relative cost (Cross, 2001).

Launching A Successful E-Learning Program

How do you launch a successful e-learning program? First, make sure that you have support from top management to ensure a quality technology infrastructure. This will ease information technology installation and gain support from the supervisors of the intended audience. Meet with your Information Technology department to determine how your existing systems will accommodate e-learning. Determine whether you will need to make any additional investments. If you don't have internal capabilities, you will have to look at external options (Galagan, 2001).

Second, determine your target audience, or who will be learning. The audience should be of strategic value to the organization. This includes both internal and external customers. Determine what you know about your audience. What are their learning styles? Analyze the learning approach compared to the learners' skill level (Redmon and Salopeck, 2000).

Third, examine the content. Describe what the training course will be about. Estimate how long the course will take to complete. Determine if the course will have to be built from scratch or if it already exists (Redmon and Salopeck, 2000).

Fourth, determine what instructional methodologies should be used. Decide on how the content will be delivered. Determine how retention will be measured and assessed. Modules of information might be broken down into lessons, which could be broken down further into topics and subtopics. Examine how the user will access the content (Redmon and Salopeck, 2000).

Fifth, establish a proposed timeframe of development. Evaluate the time to approve instructional methods, delivery milestones, testing periods, and evaluation periods. Incorporate anticipated time constraints imposed on the budget, due to funding, or other circumstances (Redmon and Salopeck, 2000).

E-learning may face roadblocks during implementation and delivery. Trainers should not substitute e-learning for face-to-face learning entirely during initial execution. There will be times and topics that need traditional training delivery methods. E-learning should be integrated into continuous training methods. At Interim Services, Inc. in Fort Lauderdale, Florida, e-learning is viewed as a supplement to traditional classroom instruction. Perry Borman, Interim Services' Director of Organizational Development, states, "Our expectation is that e-learning will complement other development activities." (Galagan, 2001). Resistance from current trainers and instructors may also arise. They may fear losing their jobs to evolving technology. They might anticipate difficulty in transforming their curriculum to technology-based instruction (Galagan, 2001).

Because e-learning is relatively young, is it subject to economic uncertainty and caution. The recent economic recession has collided with the competitive advantage of e-learning (Barron, 2001). For example, in 1999, during the boom of the Internet Age, some financial analysts expressed concern about the future of e-learning portals, which link training products and e-commerce. In the Spring of 2000, those concerns were evident. Representatives from SmartForce, TrainingNet, and Click2Learn.com acknowledged that the business-to-consumer conception was not evolving as anticipated. By the Spring of 2001, learning portals had begun to crumble economically, just as the dot.com industry had. Why? Consumers weren't demanding information as had been expected. Just because the portals were simply there, didn't mean that consumers hungered for them. Many e-learning experts believe that the shaky foundation in the portal market isn't over and that this has implications for the future of e-learning. (Kiser, 2001).

Conclusion

Phenomenal technological growth has revolutionized traditional classroom instruction. Today, "e-learning," or electronic learning, has become an integral part of organizational training and the delivery of university courses. In the information age employee development and training have become crucial objectives for a majority of the workforce. Proponents of e-learning suggest that e-learning provides employees real-time learning of critical knowledge. The e-learning industry is currently facing growing pains as it matures from an innovative concept to an educational norm. Training professionals are challenged to show its value even in the current economic slump. They must demonstrate cost-effectiveness, invent new methods of implementing e-learning, and promote awareness of technology-based learning as a source of competitive advantage. Companies and educational institutions are encouraged to take a highly systematic approach to designing, developing, delivering, and evaluating the results of all e-learning offerings.

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